FlyBy Math™ Alignment
Colorado Model Content Standards and Benchmarks
Amended 9-15-05

Standard 1:
Students develop number sense and use numbers and number relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Benchmarks	***FlyBy Math*™ Activities**
4. use the relationships among fractions, decimals, and percents, include the concepts of ratio and proportion, in problem-solving situations;	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

Standard 2:
Students use algebraic methods to explore, model, and describe patterns and functions involving numbers, shapes, data, and graphs in problem-solving situations and communicate the reasoning used in solving these problems.

Benchmarks	***FlyBy Math*™ Activities**
1. represent, describe, and analyze patterns and relationships using tables, graphs, verbal rules, and standard algebraic notation;	--Represent distance, speed, and time relationships for constant speed cases using tables, bar graphs, line graphs, equations, and a Cartesian coordinate system.
3. analyze functional relationships to explain how a change in one quantity results in a change in another (for example, how the area of a circle changes as the radius increases, or how a person's height changes over time);	--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. --Interpret the slope of a line in the context of a distance-rate-time problem.

Standard 4:
Students use geometric concepts, properties, and relationships in problem-solving situations and communicate the reasoning used in solving these problems.

Benchmarks	***FlyBy Math*™ Activities**
3. apply the concepts of ratio, proportion, and similarity in problem-solving situations;	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

4. solve problems using coordinate geometry;	--Plot points on a schematic of a jet route, on a vertical line graph, and on a Cartesian coordinate system to describe the motion of two airplanes.

Standard 5:
Students use a variety of tools and techniques to measure, apply the results in problem-solving situations, and communicate the reasoning used in solving these problems.

Benchmarks	***FlyBy Math*™ Activities**
1. estimate, use, and describe measures of distance, perimeter, area, volume, capacity, weight, mass, and angle comparison;	--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation.
2. estimate, make, and use direct and indirect measurements to describe and make comparisons;	--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation. --Compare airspace scenarios for both the same and different starting conditions and the same and different rates.
4. develop and use formulas and procedures to solve problems involving measurement;	--Use the distance-rate-time formula to predict and analyze aircraft conflicts.

Standard 6:
Students link concepts and procedures as they develop and use computational techniques, including estimation, mental arithmetic, paper-and-pencil, calculators, and computers, in problem-solving situations and communicate the reasoning used in solving these problems.

Benchmarks	***FlyBy Math*™ Activities**
1. use models to explain how ratios, proportions, and percents can be used to solve real-world problems;	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.
3. develop, apply, and explain a variety of different estimation strategies in problem-solving situations, and explain why an estimate may be acceptable in place of an exact answer;	--Predict outcomes and explain results of mathematical models and experiments.
4. select and use appropriate algorithms for computing with commonly used fractions and decimals, percents, and integers in problem-solving and determine whether the results are reasonable.	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.